



#13/1378 02  
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Patent Application of: )  
Stephen W. Rose . )  
Serial No.: 09/599,269 ) Group Art Unit: 1724  
Filed: June 22, 2000 ) Examiner: Marianne S. Ocampo  
Title: ANNULAR PLEATED FILTER CARTRIDGE )  
FOR LIQUID FILTRATION APPARATUS )

**DECLARATION OF STEPHEN W. ROSE UNDER 37 CFR §1.131**

I, Stephen W. Rose, hereby declare as follows:

1. I am inventor of patent application Serial No. 09/599,269 ("my '269 application") directed to an annular pleated filter cartridge with an annular non-woven filter element characterized in that it is a non-perforated non-woven material of flash-spun plexifilamentary high-density polyethylene fibrils, the filter material having a pressure drop of less than 4 psid at a flow rate of 10 gal/hr and a filtration efficiency of at least 98% of 1-2 micron particulates at a pressure differential of 30 psid -- e.g., a Dupont Tyvek material.
2. I became aware of Patent No. 6,143,106 (Shane) after citation thereof during the Patent and Trademark Office (PTO) examination of my '269 application. Such patent is referred to herein as "the Shane '106 patent" and its application as "the Shane patent application." As can be seen from the Shane '106 patent, the Shane patent application was filed on February 8, 1999.
3. Prior to February 8, 1999, as set forth in detail below, the invention of my '269 patent application was conceived and reduced to practice by me in connection with my research and development work for Oberlin Filter Company ("Oberlin"), assignee of my '269 application, as is supported by the specific facts set forth below and the attached supporting documents which are identified herein and form parts of this declaration.

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4. More specifically, well prior to February 8, 1999, I conceived the claimed annular pleated filter cartridge. Such conception was *before* the redacted date of Exhibit A hereof, which is a true and correct copy of the front and back pages of notes I took in connection with a meeting related to steps toward development of my conceived invention. As shown by the redacted date of Exhibit A, such meeting, which was attended by Kevin Hazen and Jeff Sodemann, both of Epic Resins, Palmyra, Wisconsin, Tony and Chris Gorence, both of Converted Products, Inc., Milwaukee, Wisconsin, and myself, was long before February 8, 1999. Two other dates redacted from Exhibit A are also long before February 8, 1999. Exhibit A does not describe the invention which I had conceived, but touches on development-related issues pertaining thereto.

5. My early conception date is further and more specifically evidenced by Exhibit B, a true and correct copy of a document entitled "Request for Quotation -- Custom Products" that was completed by me on a form provided by Keystone Filter Division (hereinafter "Keystone"). Keystone is a custom fabricator that was retained by me specifically for the purpose of reduction to practice, under my instructions, of the invention I had conceived.

6. The date of Exhibit B (which is redacted from the document) is later than the date of Exhibit A, but is well before February 8, 1999. As seen on Exhibit B, in my request for custom fabrication work as part of my research and development: (a) I refer to a "new application," (b) I indicate that Oberlin would supply the media (by stating, "We would supply the media to be pleated, then assembled into cartridges."), and (c) I specify that "TYVEK" would be such media.

7. I had the TYVEK material noted in Exhibit B and such material was within the scope of my present '269 application. The annular pleated filter cartridge as conceived by me had:

- each and every element and characteristic of the independent claims (i.e., claims 1 and 23) of my '269 application (as filed and pending);
- each and every element and characteristic of at least most of the dependent claims, including claims 2-9, 20-22 and 28-31, many of which are further characterizations of the nature of the TYVEK material of the inventive cartridge; and
- the characteristics added by dependent claims 12 and 18-19.

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8. Pursuant to my request(s), on information and belief, at least one hand-made custom annular pleated filter cartridge was made for me by Keystone pursuant to my instructions and provided to me for testing. Such cartridge(s) had each and every characteristic of the claims of my '269 application as noted above. I received such hand-made cartridge(s) made pursuant to my instructions during the period subsequent to the redacted date of Exhibit B but still well before February 8, 1999. Attached as Exhibit C is a true and correct copy of a photograph which, on information and belief, is of the hand-made inventive annular pleated filter cartridge referred to in this paragraph.

9. I tested the hand-made inventive annular pleated filter cartridge that had been made pursuant to my instructions and found that it functioned. However, while such annular pleated filter cartridge worked, it was insufficiently acceptable to be manufactured for commercial introduction. Therefore, I determined at that time that it was necessary to continue with Oberlin's research and development efforts, which we did.

10. As a part of Oberlin's contacts with the fabricator regarding improving the inventive cartridge to make it acceptable as a commercial product, and well before acceptable commercial quality was obtained, the fabricator sent me a "quotation" for custom annular pleated filter cartridges in various sizes and quantities. A true and correct copy of such Keystone document is attached as Exhibit D. The dates of such quotation and of its receipt by us, both of which were redacted from Exhibit D, are well before February 8, 1999.

11. While Keystone's "quotation" (Exhibit D) does refer to quantities of custom cartridges, and while this provided Oberlin an idea of what its potential supplier's pricing might be when and if commercial development reached completion, the inventive product was in fact still in a developmental stage at that time -- not ready for commercial introduction. My intention at that time was to obtain the developmental annular pleated filter cartridges only in small quantities sufficient for further functional testing purposes.

12. This developmental intention is supported by the fax I sent to Keystone a few days later, a true and correct copy of which is attached as Exhibit E. The date of Exhibit E is redacted,

as are a number of handwritten dates (a total of eight) within certain handwritten notes on such document referring to various developmental activities and dates. The developmental nature of the project during the period spanned by the redacted content dates of Exhibit E is indicated by my references in the typewritten portion of such document to the "need to have some details of the cartridge construction clarified ..." and to "our [Oberlin's] current purposes."

13. The developmental nature of the project at that time is also seen by the handwritten notes of Exhibit E which, on information and belief, were placed on such document over a period of time by Keystone's Chris Donatelli, including the handwritten reference to planned "testing" and the handwritten reference indicating that Oberlin "eventually will *sample* 10, 20 & 30" cartridges" (emphasis added).

14. The redacted date of Exhibit E and all of the redacted handwritten note dates are *before* February 8, 1999, the last such redacted date being in late January 1999. The redacted handwritten dates proceed chronologically down the page, the earliest being above the others and the latest being near the bottom of the page. Exhibit E and its contents reflect the continued diligent, on-going development activities from long prior to February 8, 1999 right up to February 8, 1999, and thereafter.

15. Attached as Exhibit F is a true and correct copy of an Oberlin form entitled "Order" reflecting a further request I made on March 11, 1999 to the fabricator for additional samples of the inventive annular pleated filter cartridge of this invention. This was done in connection with our on-going research and development effort referred to above. As can be seen, the order was a zero-price order for two custom samples of such cartridges.

16. As indicated by Exhibit F, the two developmental samples were shipped by the fabricator on March 27, 1999. Such additional samples were samples which functioned and, as with regard to the earlier-made cartridge in accordance with my invention, had each and every characteristic of the claims of my '269 as noted above. After receiving such samples, research and development efforts continued toward an annular pleated filter cartridge of commercially-acceptable quality.

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17. Prior to the dates of Exhibits D-F, Steven L. Hughes was employed by Oberlin, and thereafter Steven L. Hughes assisted me in connection with the development efforts.

18. All of the work that we did or that was done under my direction was done in the United States.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; I further declare that these statements are made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both under 18 USC §1001 and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

  
\_\_\_\_\_  
Stephen W. Rose

Date 06/17/02

AVAILABLE

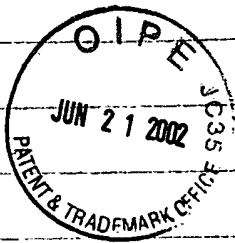
3/10/30 MM

NEW 0.2

GREAT LAKES

30" 38.10 PP SUPPORT  
15 GALLON

CONVERTED PRODUCTS



SIZE: 10" OR 30" (VAST MAJORITY)  
2 1/2" O.D.

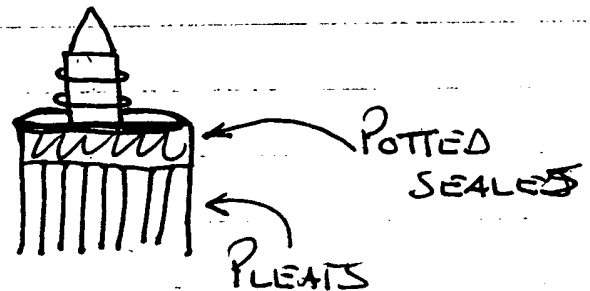
1/2" AD \$105-

PLEATED 5-6 FT<sup>2</sup> SINGLE OPEN END

STANDARD PP END CAPS - DOUBLE O RING END SEAL

222 OR 226  
CAP OR FIN

\$ RANGE \$10 → \$25  
Quantity - Abt



Tyvek/Scrim

T23B MUST HAVE SCRIMS OF (?) REEMAY ON  
STREAM SIDE AND CONWEB/VEXAR ON  
STREAM SIDE.

FILTERTE/MEMTEC - DUOFINE / POLYFINE

PALL - HDC

COMMERCIAL (PARKER HANNIFIN) PCC / POLYFLOW

★ AVOID:



FLAT GASKET  
NO GOOD

RECEIVED  
JUL 03 2002  
TC 1700

★ CAN THEY DIE CUT SMALL AMOUNT FOR BOOKS

THURSDAY/FRIDAY FOR LUNCH

TUESDAY @ 4:00 → 5:00

\$50,000/100,000 TOOLING COST

\$25,000 MIX/METER

EPIC RESINS

LT BLUE - LOW DUROMETER

LOW WICKING → GOOD

GREEN - HIGH DUROMETER

LOW WICKING

VERY GOOD CHEMICAL RESISTANCE

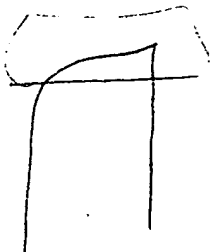
EPOXY → NOT A DIFFERENCE IN WICKING

EXCELLENT CHEMICAL RESISTANCE

CONVERTED PRODUCTS

\$0.4/YARD SLITTING

WILL GET SONIC BONDING & ALSO



# Request for Quotation — Custom Products

This page is provided for multiple use. Please make a photocopy first. Then fill in all information and fax completed form to 215-997-1839.

## General Information

Your Name STEPHEN ROSE Date \_\_\_\_\_  
Company OBERLIN FILTER Job Function R+D  
Mailing Address 404 PILOT COURT Department LAB  
WILKES-BA, WI 53188  
Telephone 414/547-4900 FAX -0683 e-mail \_\_\_\_\_

This application is: ☒ New ☐ Existing

Product Desired is: ☒ Pleated Filter Media ☒ Filter Cartridge ☐ Other \_\_\_\_\_

Application is: ☐ Air ☒ Liquid Flow Direction is: ☐ Inside-Out ☒ Outside-In

Flow Rate Required is: \_\_\_\_\_ CFM/GPM

Filter Efficiency Required is: \_\_\_\_\_ % reduction of \_\_\_\_\_ micron particles

Description of Application: WE WOULD SUPPLY MEDIA TO BE PLEATED, THEN ASSEMBLED INTO CARTRIDGES

Type of Media Desired is: TYVEK

OR ☐ Manufacturer's Choice

## Cartridge Dimensions

O.D. \_\_\_\_\_

I.D. \_\_\_\_\_

Height \_\_\_\_\_

Glue Bead Separation: ☐ None ☐ Intermittent

Inner Filter Support ☒ Yes ☐ No

Outer Filter Support ☒ Yes ☐ No

End Cap Type: \_\_\_\_\_

## Pleated Element Specifications

Media Width \_\_\_\_\_

Number of Pleats \_\_\_\_\_

Depth of Pleat \_\_\_\_\_

☐ Continuous

Type: SOME SORT OF PLASTIC NET

Type: SUPPLIED BY US

Annual Quantity Required: UNKNOWN Release Quantity Required: \_\_\_\_\_

Additional Information: \_\_\_\_\_

All information provided will be handled in the strictest confidence.  
Sketches, drawings or samples may be helpful.

Call Thomas Lit-By-Fax at  
1-800-4-FAXCAT for instant  
faxed literature.

Enter literature code:  
8865 for polypropylene cartridges  
8869 for microfiberglass  
8870 for cellulose  
8871 for industrial housings



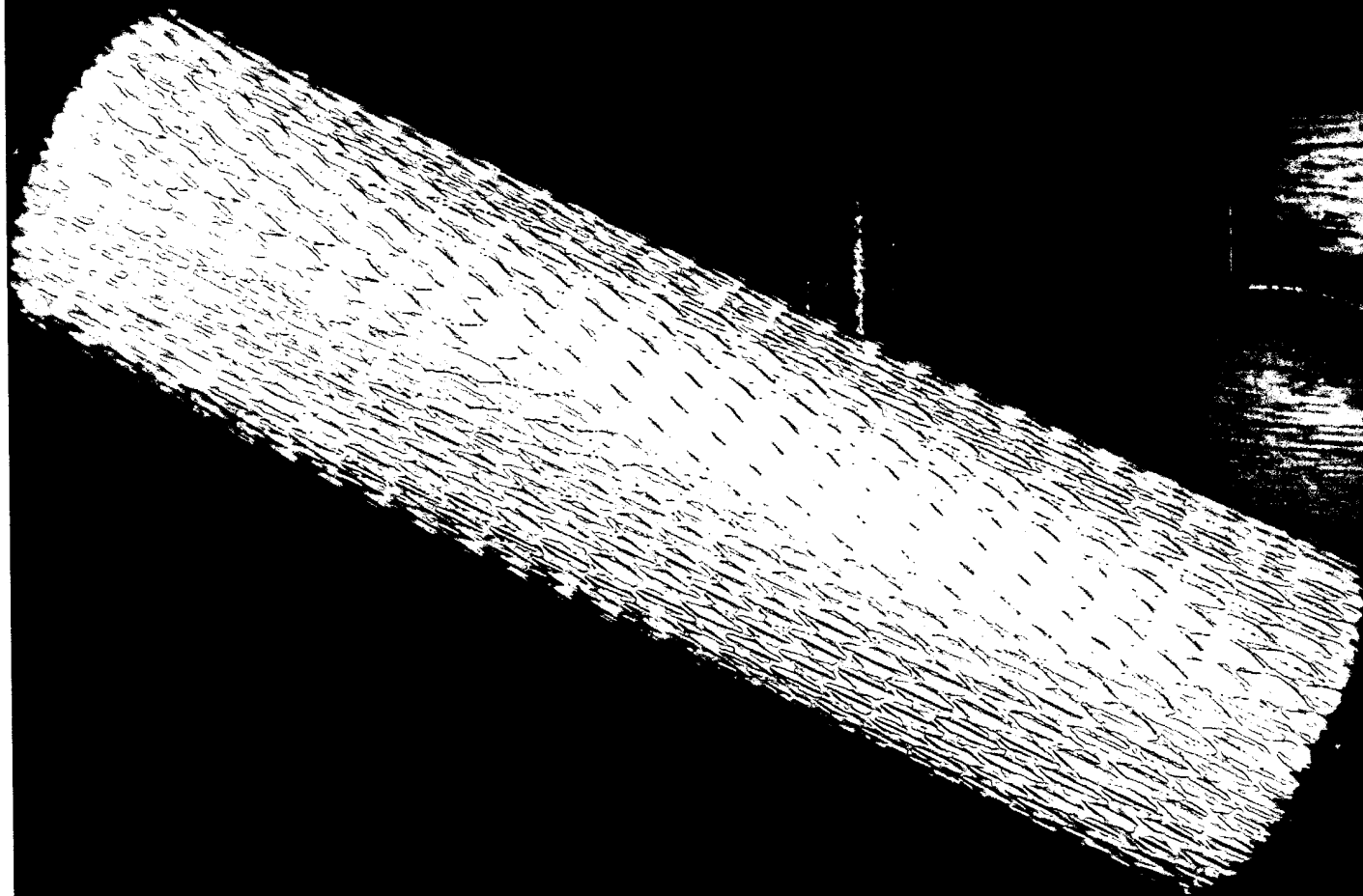
## Keystone Filter Division

2385 North Penn Road, Hatfield, PA 19440, (800)822-1863, FAX(215)997-1839

e-mail: [filters@keystone-filter.com](mailto:filters@keystone-filter.com); Web Site: <http://www.thomasregister.com/keystonefilter>

Exhibit B





**Exhibit C**

RECEIVED

QUOTATION



# Keystone Filter Division

2385 NORTH PENN ROAD • HATFIELD, PA 19440 • (215) 822-1963 • FAX: (215) 997-1839 • e-mail: filters@keystone-filter.com

CHRIS DONATELLI

ITEM	KEYSTONE P/N	DESCRIPTION	Quantity			
			500	1,000	5,000	10,000
		Oberlin Filter				
	Quote	Industrial Cartridge with customer supplied				
		media, slit to 31.0".				
		Keystone to perform the following:				
		1) Pleating				
		2) Cut to length.				
		3) Seam pleated media				
		4) Insert Keystone supplied core and outer				
		natural polypropylene net sleeve.				
		5) Adhere Keystone supplied end caps.				
		Includes EPR O-rings				
1a	Quote	226 Style / Fin end caps - 10.0" OAL	\$9.95	\$9.87	\$9.42	\$9.18
1b		226 Style / Fin end caps - 20.0" OAL	\$13.02	\$12.94	\$12.38	\$12.05
1c		226 Style / Fin end caps - 30.0" OAL	\$14.04	\$13.95	\$13.35	\$13.00
2a	Quote	222 Style / Open end caps - 10.0" OAL	\$9.51	\$9.43	\$9.00	\$8.77
2b		222 Style / Open end caps - 20.0" OAL	\$11.53	\$11.45	\$10.94	\$10.66
2c		222 Style / Open end caps - 30.0" OAL	\$13.62	\$13.54	\$12.95	\$12.62
		Quote subject to review after 90 days				
		Lead Times - 3 to 6 weeks				
		TERMS - TBD / FOB HATFIELD PA				
		+/- 10% ON CUSTOM SHIPMENTS				

Exhibit D

# Oberlin Filter Company

404 Pilot Court  
Waukesha, WI 53188

Fax: 414/547-4900

## FAX COVER SHEET

FAX NUMBER TRANSMITTED TO: 215/822-1963

To: Chris Donatelli  
Of: Keystone Filter Division  
From: Oberlin Filter Company  
Client/Matter: Cartridge quotation  
Date:

COMMENTS: Thank you for your quotation. I would like to request a visit in October. I would be accompanied by a DuPont representative, Dr. Ernest Mayer. We would like to discuss this matter further. We need to have some details of the cartridge construction clarified and I believe a meeting would be the most expeditious for our current purposes.

At your earliest convenience, please let me know if this could be arranged.

Thank you Stephen Rose.

*Possibly week of  
Steve will call.  
Still intending on coming out  
to  
Moose.*

*Backing for Tyvek  
Testing next week  
Will make arrangements.  
Meet at Show.*

Exhibit E

\* NOT COUNTING COVER SHEET. IF YOU DO NOT RECEIVE ALL PAGES, PLEASE TELEPHONE US IMMEDIATELY AT.

*Meeting at AFS Show - Oberlin to supply 30" media  
Eventually will supply 10, 20 & 30" Cartridges.  
Endcap - 222 & Spine, SOE w/soft gas hot, open & Spring and  
Stephen Rose - Will know more next week what  
they can do*

**MET PRO**  
CORPORATION

KEYSTONE FILTER DIVISION  
2385 NORTH PENN RD  
HATFIELD, PA 19440

**ORDER**

CUSTOMER NO.	CL					TERMS	F.O.B.	ORDER NO.	ORDER DATE
0105KE0045	45	999	0000		0000	NET 30 DAYS	HATFIELD, PA	7390	03/11/99
CUSTOMER REFERENCE DATA							SCHEDULED	SHIP VIA	PAGE
STEPHEN ROSE							0022	03/31/99 UPS/PPD	1

SOLD  
TO: KEYSTONE FILTER DIV

2385 NORTH PENN RD  
HATFIELD PA

19440

SHIP TO: (IF OTHER THAN "SOLO TO")

~~NAME~~ OBERLIN FILTER CO.  
~~XXXXXX~~  
404 PILOT CT.  
WAUKESHA, WI 53188

NO RETURNS ACCEPTED W/O A VALID AUTHORIZATION #, CALL 1-215-872-1963

QTY. ORDERED	QTY. SHIPPED	PRODUCT NUMBER	DESCRIPTION	U/M	UNIT PRICE	NET AMOUNT
1		SAMPLE2	30" 226 OPEN END CART	EA	0.000	0.00
1		SAMPLE1	30" 226 FIN END CART	EA	0.000	0.00
CUSTOM SAMPLES						
**SHIP ASAP						
SHOULD YOU DISCONTINUE ANY PART IN THIS ORDER, ALL REMAINING INVENTORY MUST BE TAKEN.						
<p>3/26/99</p> <p>Kick:</p> <p>What is the status of this order?</p> <p>Shipped 3/27/99 Jse</p> <p>CHECKED ON FRIDAY 3-26-99 1-2 WKS</p> <p>PAUL HAS NO TIME</p> <p>Exhibit F</p>						
2	TOTAL QUANTITY	See reverse for Terms and Conditions of Sale				
ORIGINAL ORDER						ORDER TOTAL .00

See reverse for Terms and Conditions of Sale  
ORIGINAL ORDER

ORDER TOTAL

.00